material influences the ability of the deformable gripping element to deform around the object to be gripped.

As is well known among those skilled in the art, a shape memory material has a low temperature martensitic form and a high temperature austenitic form. The deformable gripping element is given a desired configuration when in the austenitic form. If the gripping element is deformed in the martensitic form, it undergoes plastic deformation. When the gripping element is subsequently heated so that the gripping element undergoes a martensitic to austenitic phase transformation, the gripping element returns to its original configuration. The temperature at which the transition from martensitic to austenitic form is controllable.

Bendel et al discloses a suture needle holder having jaws with nitinol inserts I. Nitinol is a superelastic and shape memory alloy. Bendel et al does not refer to nitinol as being a shape memory alloy or to the transition from austenitic to martensitic form and accordingly it appears that the transition temperature is selected so that in the intended mode of operation, the shape memory effect does not come into play. Only the superelasticity is relevant, in that the insert I resumes its original shape after the needle is released, without heating. There is no disclosure or suggestion in Bendel et al that the insert undergoes plastic deformation that is reversed by heating the insert.

Applicant traverses the examiner's contention that "since materials in general are porous to some degree" the nitinol employed by Bendel et al comprises functional porosity. Since, in the context of a shape memory material, functional porosity influences the shape memory property, yet Bendel et al does not rely on or even refer to the shape memory property of nitinol, applicant submits that any porosity in the material of Bendel et al would not be considered sufficient to rise to the level of functional porosity, which influences the properties of the material in use. Applicant moreover submits that it would not have been obvious to a person of ordinary

skill in the art to modify the holder of Bendel et al by using an alloy that comprises functional porosity.

Claims 1-14 stand rejected under 35 USC 103 over Bendel et al in view of Davis, Jr.

Davis, Jr. is concerned with the structure of a projectile, i.e. a bullet. In order to increase the impact energy transfer efficiency of the projectile, Davis, Jr. teaches that the projectile should be made at least partially of shape memory alloy. The projectile is fabricated in a high energy transfer configuration when the shape memory alloy is in its austenitic form. The alloy is cooled to a temperature at which it is in the martensitic form, and is deformed to a flight configuration when in the martensitic form. When the projectile is launched, its behavior in flight is governed by its flight configuration. When the projectile strikes its target, heat is generated in the projectile due to a pressure wave passing through the projectile. The temperature of the shape memory alloy increases, transforming the alloy from the martensitic form to the austenitic form and causing the projectile to revert instantaneously to its high energy transfer configuration.

Davis, Jr. refers to the possibility of the shape memory alloy being porous and indicates that the voids due to the porosity are useful in rapidly generating heat on impact due to collapse of the voids. Column 6, lines 64-68. The fact that the voids or pores in the shape memory alloy of Davis, Jr. contribute to the heating and thus accelerate the shape memory transition has no relevance to Bendel et al since Bendel et al makes no reference to the shape memory effect and does not refer to use of heat to restore the insert I to its original shape. As noted above, the insert I is deformed elastically, and resumes its original shape immediately upon release of the needle, not plastically, such that heat must be applied to induce the transition from the martensitic form to the austenitic form. Thus, although Davis, Jr. might be read as suggesting that in some circumstances it could be advantageous to provide pores or voids in a shape memory

alloy, there is no suggestion in the prior art that these voids or pores would be useful in the inserts shown by Bendel et al.

Applicant notes for the record that Davis, Jr. teaches that the voids are useful in rapidly generating heat upon impact due to the collapse of the voids, so that the alloy reverts to the austenitic form and returns to its original, high energy transfer configuration, whereas the specification of this application describes the functional porosity as being useful in improving deformation of the gripping element around the object so as to grip the object firmly without damaging the object. Thus, the function of the voids or pores in Davis, Jr. in accelerating heating is not analogous to the function of the porosity in the context of the present invention.

In view of the foregoing, applicant submits that claim 1 is patentable over Bendel et al and Davis, Jr., whether taken singly or in combination. It follows that the dependent claims also are patentable.

Respectfully submitted,

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